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CALL FOR PAPERS

Model Validation of Transit Ridership at the Corridor and Major Transit Route Level

Title of the paper

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BIOGRAPHICAL SUMMARY FOR MAIN AUTHOR (100 words mini-CV)

Mark Charnews received his Ph.D. from The Ohio State University in 1982 in Geography with a concentration in Transportation. He taught urban and regional planning at the University of Southwestern Louisiana and was a transit planner for the Metropolitan Transit Authority of Harris County, Texas (Houston). He now is a transportation planner for the Puget Sound Regional Council with over 17 years of planning experience.

AUDIOVISUAL SUPPORT NEEDED

(A PC with Office XP, a projector, and a microphone will be provided. Please mention any other needs.)

ABSTRACT (500 words)

The Puget Sound Regional Council represents an area that has six transit agencies and a ferry system that need to plan in a cooperative and coordinated manner for changes in transit demand as the region grows. Due to the limited resources available at each agency, and the need for the transit plans to be coordinated across all agencies, the concept of using the Regional Council's travel demand model for corridor, system expansion and major transit route planning has been proposed. The first step in determining the feasibility of using the travel demand model for this purpose is to ascertain how well it replicates transit ridership patterns in the base year. The purpose of this presentation is to examine in detail, using the features of the INRO software, how well the model replicates transit ridership at the corridor and major route level.

The region's transit system, with its multiple agencies and some unique operating characteristics provides some interesting coding problems that are illustrated in the presentation. The largest transit agency in the area provided the majority of passenger count data at the most detailed level used for the validation. Their passenger count system records data for each bus run by "time point interchanges" (TPI) that allows passenger loads, and route boardings and alightings data to be assigned to each segment of a transit route that lies between two route time points. The ridership data is aggregated to these TPIs to develop screenline data. Data from other transit agencies is reported at selected bus stops to provide boarding and alighting data at bus stop and route level totals. The remaining data from the smaller transit agencies were available only at the total boardings by route level. Published transit route schedules and recorded travel time data from the transit agencies provided transit travel time data for peak and off-peak periods to calibrate transit time functions used in the model.

To complete the validation process, the model's transit ridership estimates at the route and corridor level are compared to the ridership data. Differences in model estimates and actual count data are discussed separately for local, express, and park and ride service. Spatial variances in model accuracy over the region are identified. An emphasis on the summary of model ridership estimates at selected corridors and the transit routes within each corridor is made. The successes and problems of the results of the analysis are discussed in detail. The presentation concludes with an overall evaluation of the feasibility of using a regional travel demand model to examine corridor level transit operations.

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